### INTERNATIONAL SEARCH REPORT

International application No. PCT/KR2005/000485

## A. CLASSIFICATION OF SUBJECT MATTER

# IPC7 B01D 63/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 B01D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Patents and applications for invention since 1975

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and application for Utility models since 1975

Electronic data base consulted during the intertnational search (name of data base and, where practicable, search terms used) eKIPASS, Delphion, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
Α .	US 4066546 A (Toshin Science Co., Ltd. et al.) 3 January 1978 see the whole document	1-30	
Α	US 4176064 A (Palmer Engineering Company Ltd.) 27 November 1979 see the whole document	1-30	
<b>A</b>	US 6165365 A (Spintek Systems) 26 December 2000 see the whole document	1-30	
A	US 4312756 A (Franz O. Hug) 26 January 1982 see the whole document	1-30	
Α	US 5591340 A (Costner Industries Nevada, Inc.) 7 January 1997 see the whole document	1-30	
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Further documents are listed in the continuation of Box C.	See patent family annex.		
Special categories of cited documents:     "A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention		
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive		
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed	step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search	Date of mailing of the international search report		
27 MAY 2005 (27.05.2005)	30 MAY 2005 (30.05.2005)		
Name and mailing address of the ISA/KR	Authorized officer		
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No. PCT/KR2005/000485

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4066546 A	03-01-1978	JP 51139578 A2	01-12-1976
		IT 1043706 A	29-02-1980
		GB 1479553 A FR 2289224 A1	13-04-1977
		DE 2545482 A1	28-05-1976 06-05-1976
		CA 1065261 A1	30-10-1979
		BR 7506965 A	17-08-1976
		AU 8596275 A1	05-05-1977
US 4176064 A	27-11-1979	NO 0782131 A	21-12-1978
	21 11 1010	NL 7806609 A	22-12-1978
		GB 1603480 A	25-11-1981
		DE 2826342 A1	21-12-1978
		CA 1057649 A1 BR 7803895 A	03-07-1979 13-03-1979
<del></del>	<del></del>		
US 6165365 A	26-12-2000	NONE	
US 4312756 A	26-01-1982	US 4312756	26-01-1982
	20 01 1002	EP 0008395 A1	05-03-1980
		DE 2836866 A1	13-03-1980
		AT 0003401 E	15-06-1983
		WO 9709105 A1	10.00.1007
US 5591340 A	07-01-1997		(3-(13-1007
US 5591340 A	07-01-1997	JP 03008030 B2	13-03-1997 14-02-2000
US 5591340 A	07-01-199 <u>7</u>		